UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,983	05/22/2007	Kiminori Mizuuchi	2006_1506A	9322

52349 7590 07/15/2008

WENDEROTH, LIND & PONACK L.L.P.
2033 K. STREET, NW
SUITE 800
WASHINGTON, DC 20006

EXAMINER	
NGUYEN, PHILLIP	
ART UNIT	PAPER NUMBER
2828	
MAIL DATE	DELIVERY MODE
07/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,983	MIZUUCHI ET AL.	
	Examiner	Art Unit	
	PHILLIP NGUYEN	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/6/06, 5/22/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 12 recites the limitation "the optical member" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated. by Egawa et al. (US 20030179798).

With respect to claim 1, Egawa discloses in Fig. 2 a coherent light source for simultaneously emitting a first light (light from the laser oscillator) and a second light (ultraviolet ray 10) having a wavelength shorter than that of the first light, comprising: a light source main body emitting at least the first light; a member transmitting or reflecting the first light; and a functional film 9 being provided on at least a part of the member, the functional film 9 having a photocatalytic effect to be induced by the second light. It's noted that functional film 9 is

mounted on a body of a laser oscillator having an opening where the laser light generated by the laser medium passing through. Therefore function film 9 is considered as a part of the opening. This opening transmits light from the laser medium to the outside of the laser oscillator.

With respect to claim 3, Fig. 2 shows the first light and second light irradiating "approximately" the same optical paths.

With respect to claim 4, since the claim fails to limit the term "approximately", it is believed that the first and second lights irradiate "approximately" equal areas on an irradiation surface of the member including the functional film.

3. Claims 1-2, 6, 12 are rejected under 35 U.S.C. 102(b) as being anticipated. by Shimazaki et al. (JP02000121548A).

With respect to claim 1, Shimazaki discloses in Fig. 1 a coherent light source for simultaneously emitting a first light 12 and a second light (from spectrum lamp 19) having a wavelength shorter 20 than that of the first light, comprising: a light source main body emitting at least the first light; a member 15 transmitting or reflecting the first light; and a functional film 14 being provided on at least a part of the member 15, the functional film 14 having a photocatalytic effect to be induced by the second light.

With respect to claim 2, Shimazaki discloses the wavelength of the first light is 400 nm or longer (670 nm).

With respect to claim 6, Shimazaki discloses the wavelength of the second light is 600 nm or less which meets the claim requirement.

With respect to claim 12, Shimazaki discloses an optical system as shown in Fig. 1. The optical system comprising: a coherent light source 11 for simultaneously emitting a first light 12 and a second light 19 having a wavelength (600 nm) shorter than that of the first light (670 nm); a condensing or projecting optical member 13; and a functional film 14 being provided on at least a part of the optical member which receives irradiation of light from the coherent light source, the functional film having a photocatalytic effect to be induced by the second light.

4. Claims 1, 7-8, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated. by Akinori (JP2001070787).

With respect to claims 1 and 7, Akinori discloses in Fig. 1-2 a coherent light source for simultaneously emitting a first light 14 and a second light (converted light/ SHG) having a wavelength shorter than that of the first light, comprising: a light source main body emitting at least the first light 14; a member 15 for transmitting or reflecting the first light; and a functional film 40 being provided on at least a part of the member 15, the functional film 40 having a photocatalytic effect to be induced by the second light.

With respect to claim 8, Akinori discloses the first wavelength conversion element 16 being formed of a nonlinear optical element.

With respect to claim 12, Shimazaki discloses an optical system as shown in Fig. 1. The optical system comprising: a coherent light source 14 for simultaneously emitting a first light and a second light (converted light) having a wavelength shorter than that of the first light; a condensing or projecting optical member 13; and a functional film 40 being provided on at least

a part of the optical member 15 which receives irradiation of light from the coherent light source, the functional film having a photocatalytic effect to be induced by the second light

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 9-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akinori (JP2001070787).

With respect to claim 5, 9-11, Akinori discloses the claimed invention and further the light source main body being formed of a solid-state laser medium including Nd. However, Akinori does not teach the second light being a third harmonic or higher harmonic. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide more nonlinear crystal /frequency conversion element to generate higher harmonic. It is further noted that using nitride semiconductor laser for optical recording is well known in the art.

With respect to claim 13, Akinori discloses the claimed invention except for explicitly teaching power density of 100 W/cm^2. It would have been obvious to one having ordinary skill in the art to realize the functional film 40 being provided on an radiation surface 15 where the power density is highest to obtain the maximum result.

Communication Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phillip Nguyen/

AU 2828

/Minsun Harvey/
Supervisory Patent Examiner, Art Unit 2828